This Month's Topic : ## Histologic Tumor Grading

The definition of the word "grade" as defined by Merriam Webster's Collegiate Dictionary (10 [th] Edition):
"Grade", step, degree, A:1. A stage in a process; 2. A position in a scale or ranks or qualities; B: A degree
of severity in illness (carcinoma).

Q :   **What is meant by histologic tumor grade?**

A :   Histologic grading refers to how much the tumor cells resemble normal cells. This is also called differentiation. The lower the normal grade, the more the tumor cells resemble normal cells. Thus, Grade 1 refers to cells that are well differentiated, whose features and growth patterns nearly resemble normal cells. Grade 2 indicates that the cells are moderately well differentiated - there have been some changes in both the features of the cells and in their growth patterns. Grade 3 cells are poorly differentiated, with features and growth patterns that are abnormal. Grade 4 cells are undifferentiated and have very abnormal features and growth patterns.

Q :   **What is meant by the nuclear grade of tumor?**

A :   Nuclear grade refers to the rate at which the cancer cells in the tumor are dividing to form more cells (proliferation). Cancer cells that divide more often are growing faster and more aggressively than those that divide less often. The nuclear grade is determined by the percentage of cells that are dividing. A nuclear grade 1 means that the cells are dividing slowly, with nearly normal nuclei. At the other end is Grade 3, with fast-dividing cells and abnormal nuclei.

Q :   **What is the Gleason Score?**

A :   The Gleason Score is specific to prostate cancer and is a method used by doctors to determine how close to normal the cells look when the tissue is examined under the microscope. Scores from 1 to 4 indicate that the tumor is well differentiated, 5 to 7 indicate that it is moderately differentiated and 8 to 10 indicate that it is poorly differentiated. The greater the difference in the appearance of the cell from what is normal, the higher the number that is assigned on the Gleason Scale.

See pages 28 - 31 in the TCR Handbook for more information on grade of tumor.

Reference : TCR Handbook, pages 28 - 31.

Q :   **Which primary sites cannot be TNM staged without the grade?**

A :   These primary sites are :   1. Bone
2. Prostate (clinical T1a only)
3. Connective, subcutaneous and other soft tissues (sarcomas)

Reference : Workbook for Staging of Cancer, Second Edition, page 36

Q :   **Which grade would I use if two are given in the pathology report?**

A :   You would record the highest category (which would be the highest value). For example, the pathology report states moderately to poorly differentiated adenocarcinoma of the prostate. The grade would be 3, poorly differentiated.

Reference : Workbook for Staging of Cancer, Second Edition, page 37
TCR Handbook, page 29

<u>Common Error</u>:

Grade and Stage are two very different entities. The **grade** shows the aggressiveness of the tumor, and is best determined from a specimen obtained at resection of the primary site. If this is unavailable, the grade from a biopsy of the primary site, or cytology should be used. DO NOT use a grade from a metastatic site. There are certain histologies, which in the past were automatically assigned a specific grade. Facilities following AJCC guidelines still follow this guideline for the purpose of staging.

<u>**Common Error (con't.):**</u>

Examples :   *Small / large cell of the lung
                 *Ewing's sarcoma of bone and soft tissue
                 *Rhabdomyosarcoma of soft tissue

However, starting with 1998 cases, state reporters following SEER guidelines will need to have the supporting documents from the medical record to assign a grade.

Stage shows the extent of the tumor outside its origin. In other words, where did this tumor go and how did it get there?

References : TCR Handbook pages 28 - 31
             AJCC Cancer Staging Manual, 5th Edition, page 8
             Workbook for Staging of Cancer, Second Edition, page 37

Note : The 6th Digit Code for Histologic Grading and Differentiation

1	**Grade I**	**Well Differentiated, Differentiated, NOS BR low**
2	**Grade II**	**Moderately differentiated, Low grade, Moderately well differentiated Intermediate Differentiation BR intermediate**
3	**Grade III**	**Poorly differentiated, Intermediate grade BR high grade**
4	**Grade IV**	**Undifferentiated, High grade Anaplastic**
9		**Grade or differentiation not determined, not stated or applicable**

The 6th Digit Code for T-Cell and B-Cell Designation for Lymphomas and Leukemias

5	**T-Cell, T-precursor**
6	**B-Cell** **Pre-B** **B-precursor**
7	**Null Cell** **Non T-non B** **For Leukemias only**
8	**Natural killer cell, NK cell**
9	**Cell type not determined, not stated or not applicable**

For lymphomas and leukemias, classifications "5 - 8" take precedence over grading or differentiation.

DO NOT use "high grade", "low grade" or "intermediate grade" descriptions for lymphomas as a basis for differentiation. However, in the absence of the above classifications (5 - 8), where the grades are specifically given (well differentiated, moderately differentiated or poorly differentiated), it is appropriate to code accordingly.

EXAMPLE :   Diffuse poorly differentiated lymphoma would be coded 9672 / 33.

References :   International Classification of Diseases for Oncology, Second Edition, pages 23 and 98
              Registry Operations and Data Standards, page 11
              TCR Handbook, page 29

Sources in the medical record where the grade information may be found are :

• Pathology Reports   • Cytology Reports   • Bone Marrow Reports   • Autopsy Reports

Any questions, comments or suggestions will be greatly appreciated and should be directed to your regional office, or via email to susan.perez@tdh.state.tx.us.

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